

Curriculum Vitae



Sheng Liu

PhD, University of British Columbia
Postdoctoral Fellow, Johns Hopkins University

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<https://sheng-liu.github.io>
<https://github.com/sheng-liu/sojourner>

EDUCATION

LIFE SCIENCE	COMPUTER SCIENCE
2016~2019 Postdoc, Biochemistry and Biophysics, JHU, US	2016~2019 Linux System Engineer Program, Linux Foundation Machine Learning Engineer Program, Udacity
2009~2015 PhD, Medical Genetics, UBC, CA	2013~2014 Data Analysis for Genomics, Edx Harvard
2003~2006 MSc, Developmental Biology, NWAFU, CN	2005~2006 Network Engineer Program, Computer Science, NWAFU, CN
1999~2003 DVM, Veterinary Medicine, NWAFU, CN	2001~2003 Diploma, Computer Science, NWAFU, CN

Research Postdoctoral Fellow 08/2016~04/2019

School of Arts & Sciences and School of Medicine, **Johns Hopkins University**, US

Supervisor Dr. Carl Wu (Bloomberg Distinguished Professor)

Research Project: Mechanism of SWR1 mediated H2A.Z exchange

PhD Graduate Student /Research Assistant 09/2009~07/2015

Life Science Institute, Faculty of Medicine, **University of British Columbia**, Canada

Supervisor, Dr. Matthew C. Lorincz (Professor & Associate Head)

Research Project: Transcriptional regulation of endogenous retrovirus in mouse germ line

MSc Graduate Student /Research Assistant 09/2003-06/2006

National Stem Cell Engineering and Technology Centre, **Northwest A&F University**, China

Supervisor, Dr. Zhongying Dou (Professor & Centre Director)

Research Project: Derivation and characterization of embryonic germ cells

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EXPERIENCES

R&D Consultant 08/2015~07/2016

Howard Hughes Medical Institute (HHMI), Janelia Research Campus, VA, US

Supervisor, Dr. Carl Wu

Research Project: Single molecule study of histone H2A.Z exchange by SWR1 chromatin remodeling complex

Research Associate 06/2006~06/2009

National Institute of Biological Sciences (NIBS), Beijing, CN

Supervisor, Dr. Shaorong Gao

Research Projects: Tissue engineering of histocompatible mouse cardiac transplant;
Reprogramming human thalassemia cells for gene and cell therapy

PUBLICATIONS

2016~2019 Biochemistry /Biophysics /Computational Biology

Johns Hopkins University, United States

Liu S, Yoo S, Tang X, Sung Y, Wu C (2019). sojourner: An R package for statistical analysis of single molecule trajectories. R package version 1.1.0, <https://github.com/sheng-liu/sojourner>. **Bioconductor**: 10.18129/B9.bioc.sojourner

Wang Y, **Liu S.**, Sun L, Xu N, Shan S, Wu F, et al. (2019) Structural insights into histone chaperone Chz1-mediated H2A.Z recognition and histone replacement. **PLoS Biol** 17(5): e3000277.

Anand Ranjan, Vu Nguyen, **Sheng Liu**, Jan Wisniewski, Jee Min Kim, Xiaona Tang, Gaku Mizuguchi, Vivian Jou, Timothy Nickels, Brian P. English, Qinsi Zheng, Ed Luk, Luke D. Lavis, Timothee Lionnet, Carl Wu. Live-cell single particle imaging reveals the role of RNA polymerase II in histone H2A.Z eviction (2020). (submitted)

Vu Q. Nguyen, Anand Ranjan, **Sheng Liu**, Xiaona Tang, Jan Wisniewski, Gaku Mizuguchi, Kai Yu Li, Vivian Jou, Qinsi Zheng, Luke Lavis, Timothée Lionnet, Carl Wu. Dynamic transcription initiation factors on chromatin in live cells (2020). (submitted)

2009~2016 Epigenetics /Developmental Biology /Computational Biology

University of British Columbia, Canada

Liu, S. *, Brind'Amour, J. *, Karimi, M.M., Shirane, K., Bogutz, A., Lefebvre, L., Sasaki, H., Shinkai, Y., and Lorincz, M.C. (2014). Setdb1 is required for germline development and silencing of H3K9me3-marked endogenous retroviruses in primordial germ cells. **Genes Dev** 28, 2041–2055.

Brind'Amour, J., **Liu, S.**, Hudson, M., Chen, C., Karimi, M.M., and Lorincz, M.C. (2015). An ultra-low-input native ChIP-seq protocol for genome-wide profiling of rare cell populations. **Nat Commun** 6, 6033.

2003~2009 Cloning /Stem Cell /Tissue Engineering

National Institute of Biological Sciences, China

Lü, S. *, Wang, H. *, Lu, W. *, **Liu, S.** *, Lin, Q., Li, D., Duan, C., Hao, T., Zhou, J., Wang, Y., et al. (2010). Both the transplantation of somatic cell nuclear transfer- and fertilization-derived mouse embryonic stem cells with temperature-

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responsive chitosan hydrogel improve myocardial performance in infarcted rat hearts. **Tissue Eng Part A** 16, 1303–1315.

Lü, S.* , Liu, S.* , He, W., Duan, C., Li, Y., Liu, Z., Zhang, Y., Hao, T., Wang, Y., Li, D., et al. (2008). Bioreactor cultivation enhances NTEB formation and differentiation of NTES cells into cardiomyocytes. **Cloning Stem Cells** 10, 363–370.

Lü S*, Li Y*, Gao S*, Liu S*, Wang H, He W, et al. Engineered heart tissue graft derived from somatic cell nuclear transferred embryonic stem cells improve myocardial performance in infarcted rat heart. *Journal of Cellular and Molecular Medicine*. 2010 Dec 6;14(12):2771–9.

Chang, G., Liu, S., Wang, F., Zhang, Y., Kou, Z., Chen, D., and Gao, S. (2009). Differential methylation status of imprinted genes in nuclear transfer derived ES (NT-ES) cells. **Genomics** 93, 112–119.

Ding, J.* , Guo, Y.* , Liu, S., Yan, Y., Chang, G., Kou, Z., Zhang, Y., Jiang, Y., He, F., Gao, S., et al. (2009). Embryonic stem cells derived from somatic cloned and fertilized blastocysts are post-transcriptionally indistinguishable: a MicroRNA and protein profile comparison. **Proteomics** 9, 2711–2721.

Wang, Y., Jiang, Y., Liu, S., Sun, X., and Gao, S. (2009). Generation of induced pluripotent stem cells from human beta-thalassemia fibroblast cells. **Cell Res.** 19, 1120–1123.

Huang, S., Wang, J., Liu, S., Li, Y., Hu, J., Kou, Z., Zhang, Y., Sun, X., and Gao, S. (2009). Differentiation of reprogrammed somatic cells into functional hematopoietic cells. **Differentiation** 78, 151–158.

TIMELINE

